



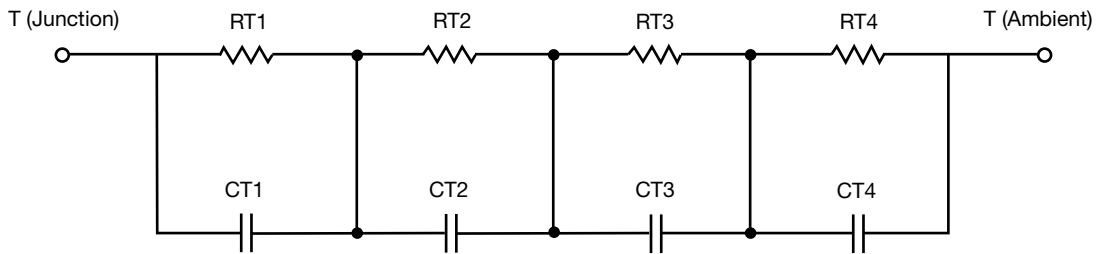
R-C Thermal Model Parameters

DESCRIPTION

The parametric values in the R-C thermal model have been derived using curve-fitting techniques. R-C values for the electrical circuit in the Foster/tank and Cauer/filter configurations are included. When implemented in PSpice, these values have matching characteristic curves to the single-pulse transient thermal impedance curves for the MOSFET.

These RC values can be used in the PSpice simulation to evaluate the thermal behavior of the MOSFET junction temperature under a defined power profile. These techniques are described in application note AN609, "Thermal Simulation of Power MOSFETs on the PSpice Platform".

R-C THERMAL MODEL FOR TANK CONFIGURATION



R-C VALUES FOR TANK CONFIGURATION			
THERMAL RESISTANCE (°C/W)			
Junction to	Ambient	Case	Foot
RT1	52.3622	N/A	12.2060
RT2	15.5000	N/A	18.0576
RT3	39.3059	N/A	6.9157
RT4	17.6163	N/A	7.8037
THERMAL CAPACITANCE (JOULES/°C)			
Junction to	Ambient	Case	Foot
CT1	1.5262	N/A	3.2161m
CT2	245.5060m	N/A	2.2699m
CT3	5.0619m	N/A	161.3147u
CT4	450.4521u	N/A	96.7941m

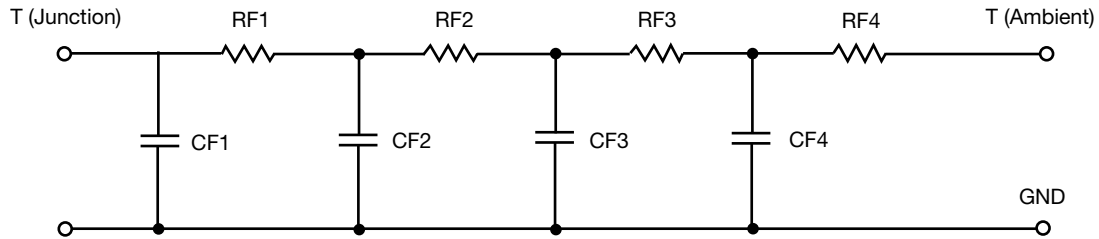
Note

- n/a indicates not applicable

This document is intended as a SPICE modeling guideline and does not constitute a commercial product datasheet. Designers should refer to the appropriate datasheet of the same number for guaranteed specification limits.



R-C THERMAL MODEL FOR FILTER CONFIGURATION



R-C VALUES FOR FILTER CONFIGURATION			
THERMAL RESISTANCE (°C/W)			
Junction to	Ambient	Case	Foot
RF1	17.5293	N/A	9.7719
RF2	36.7655	N/A	25.4959
RF3	19.0663	N/A	5.6715
RF4	51.1720	N/A	4.1563
THERMAL CAPACITANCE (JOULES/°C)			
Junction to	Ambient	Case	Foot
CF1	344.1665u	N/A	175.8926u
CF2	3.5574m	N/A	1.2315m
CF3	97.7688m	N/A	12.2564m
CF4	1.3654	N/A	321.0420m

Note

- n/a indicates not applicable

